

**UNITED STATES DISTRICT COURT
DISTRICT OF MINNESOTA**

IN RE PORK ANTITRUST
LITIGATION

This Document Relates To:

The Direct Purchaser Plaintiff Action

Case No. 18-cv-01776 (JRT-JFD)

Honorable John R. Tunheim

Magistrate Judge John F. Docherty

**PLAINTIFFS' MEMORANDUM OF POINTS AND AUTHORITIES IN
OPPOSITION TO DEFENDANTS' MOTION TO EXCLUDE THE EXPERT
REPORT AND TESTIMONY OF DR. RUSSELL MANGUM**

[UNREDACTED VERSION FILED UNDER SEAL]

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I. INTRODUCTION

Defendants move to exclude Dr. Mangum’s opinions, offered in support of Direct Purchaser Plaintiffs’ (“DPPs”) motion for class certification, that all or nearly all members of the DPP Class paid higher prices for pork products during the Conspiracy Period than they otherwise would have but for Defendants’ illegal price fixing conspiracy. (“Motion” or “Mot.”). Stripped of histrionics and hyperbole (*e.g.*, Mot. at 1-3), the Motion falls far short of the standard for exclusion, particularly at this stage of the litigation where the district court may apply a less stringent application of *Daubert* and Rule 702. Similar econometric analyses conducted by plaintiffs’ experts at the class certification stage in *In re Broiler Chicken Antitrust Litigation*, No. 16 C 8637, 2022 WL 1720468, *20 (N.D. Ill. May 27, 2022), including Dr. Mangum, were deemed based on reliable methods and “demonstrated that common impact can be shown with common evidence,” and virtually identical arguments criticizing Dr. Mangum’s econometric methods were soundly rejected by the Ninth Circuit in affirming the district court’s order finding predominance and granting class certification in *Olean Wholesale Grocery Coop., Inc. v. Bumble Bee Foods LLC*, 31 F.4th 651 (9th Cir. 2022) (*en banc*) (*cert. denied*, No. 22-131, U.S. Supreme Court 2022).

Defendants’ Motion relies heavily on their expert, Dr. Laila Haider, who generally agrees that the methodologies used by Dr. Mangum are scientific and reliable and commonly used in antitrust cases but criticizes the input and results, a classic “battle of the experts” that cannot sustain a *Daubert* challenge. These criticisms of Dr. Mangum’s opinions go to their weight, not admissibility. *In re Zurn Pex Plumbing Prod. Liab. Litig.*,

644 F.3d 604, 614 (8th Cir. 2011). Dr. Mangum’s opinions are based on sufficient facts and data and are the product of sound econometric principles and analyses. The Court should deny the Motion and consider Dr. Mangum’s opinions and testimony in ruling on DPPs’ motion for class certification.

II. LEGAL STANDARD

Federal Rule of Evidence 702 governs the admissibility of expert opinion. *McMahon v. Robert Bosch Tool Corp.*, 5 F.4th 900, 903 (8th Cir. 2021). Expert testimony is admissible if “(a) the expert’s scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case.” Fed. R. Evid. 702. The United States Supreme Court identified factors that the district court may consider in determining the admissibility of expert evidence in conducting its gate-keeping role: (a) whether the theory can be tested; (b) whether the theory has been subject to peer review or publication; (c) the known or potential rate of error; and (d) whether it is accepted in the relevant discipline. *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, 593-94 (1993). In conducting its gate-keeping role, the district court focuses on “whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue,” focusing on “principles and methodology” and not the conclusions. *Id.* at 592-93.

At the class certification stage, the Eighth Circuit allows the district court to conduct “a focused *Daubert* inquiry to assess whether the opinions of [the proposed experts], based on their areas of expertise and the reliability of their analyses of the available evidence, should be considered in deciding the issues relating to class certification.” *Zurn*, 644 F.3d at 610. This Court recently articulated the inquiry as follows:

The main purpose of the full *Daubert* analysis is for the district court to act as a gatekeeper “protect[ing] juries from being swayed by dubious scientific testimony.” There is, however, less need for the Court to protect only itself, and the Court may conduct a less stringent application of Rule 702 and *Daubert* at the class certification stage. As a result, when deciding whether to exclude testimony at this preliminary stage, where evidence is still evolving and uncertain and the decision is tentative, the Court considers “the expert testimony in light of the criteria for class certification and the current state of the evidence.” The Court need not decide conclusively if the evidence it considers at this stage “will ultimately be admissible at trial.

Taqueria El Primo LLC v. Illinois Farmers Insurance Co., 577 F. Supp. 3d 970, 985 (D. Minn. 2021) (citations omitted) (denying the defendant’s motion to exclude two expert declarations). The Eighth Circuit has a liberal standard for admission of expert testimony. *Johnson v. Mead Johnson & Co.*, 754 F.3d 557, 562 (8th Cir. 2014) (“cases are legion that, correctly, under *Daubert*, call for the liberal admission of expert testimony.”). “A review of the caselaw after *Daubert* shows that the rejection of expert testimony is the exception rather than the rule.” *Robinson v. GEICO General Ins. Co.*, 447 F.3d 1096, 1100 (8th Cir. 2006) (citing Fed. R. Evid. 702 advisory committee’s note).

III. ARGUMENT

A. **Dr. Mangum's Opinions Meet The Requirements Of Rule 702 And *Daubert***

Dr. Mangum's qualifications as an expert economist are unimpeachable and Defendants do not argue otherwise. He has a doctorate degree in Economics from the University of Southern California and has taught economics courses at Concordia University Irvine, Pepperdine University, and the University of Southern California. He has over twenty-five years of experience "using econometrics and economic analysis to evaluate and model the effects of anticompetitive behavior," including four years at the Antitrust Division of the Federal Trade Commission. May 2, 2022 Expert Report of Russell W. Mangum III, Ph.D. (ECF No. 1330) ("Mangum Report"), ¶¶ 1. In addition, he is the Executive Vice President at Cirque Analytics, an economic consulting firm that provides economic research and analysis to its clients. *Id.*, at ¶ 2.

Plaintiffs retained Dr. Mangum to:

- Analyze whether the pork industry in the United States had structural characteristics over the relevant timeframe that economic theory would suggest made it conducive to the formation and success of the alleged conspiracy.
- Determine whether there is common evidence demonstrating that all, or nearly all, DPPs were impacted by the alleged conspiracy.
- Specify a methodology (or methodologies) by which any Class-wide damages that may have resulted from the alleged conspiracy can be accurately determined.

Id., ¶ 14.¹ Dr. Mangum relied on well-accepted economic theory, analyzed extensive data and record evidence, and utilized widely-accepted econometric tools that Defendants failed to challenge as unscientific or untested. It cannot reasonably be disputed that Dr. Mangum’s methods are sound.

First, Dr. Mangum examined the economic structure of the pork packing market and the available record evidence concerning the Defendants’ behavior. Mangum Report, ¶¶ 14, 17; Section II. Dr. Mangum relied on common sources of data and information concerning the pork industry: voluminous data and documents produced by Defendant packers, including transaction data and internal business records; USDA data; deposition testimony; and economic and industry research. *Id.*, ¶¶ 15-16, App’x B. Following this study (Mangum Report, Section II), he determined, *inter alia*, that the pork packing market was conducive to price-fixing, given the Defendants’ dominance in the market, the myriad barriers to entry for competitors, the commodity nature of pork products, and the Defendants’ participation in trade organizations. *Id.*, ¶ 17. These findings, based on sufficient facts, supported a baseline economic theory that the Defendants’ collusive behavior would affect the DPPs on a class-wide basis. Accordingly, Dr. Mangum’s opinions are based on sufficient facts or data. Fed. R. Evid. 702(b).

Second, Dr. Mangum used two different statistical tools (price correlation and econometric regression model) to determine whether empirical analysis supported this

¹ Dr. Mangum prepared a second report responding to the criticisms of Defendants’ experts, Dr. Laila Haider and Dr. James Mintert. November 18, 2022 Expert Reply Report of Russell W. Mangum III, Ph.D. (“Mangum Reply Report”) (filed concurrently herewith).

theory. His reports detail at length his methods, how he “extrapolate[d] from existing data” and how he precisely and appropriately applied such reliable methods to the facts of the case to arrive at his opinion. *General Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997). Courts have accepted Dr. Mangum’s similar analyses in antitrust class action cases, both in denying *Daubert* motions and in finding common impact: “the opinions of Mangum . . . are based on reliable methods and data, and therefore should not be excluded.” *Broiler Chicken*, 2022 WL 1720468 at *13; *see also Olean Wholesale*, 31 F.4th 676 (affirming district court’s ruling that Dr. Mangum’s opinions, including those based on price correlation analysis and regression model, were capable of showing class-wide impact); *In re Korean Ramen Antitrust Litig.*, No. 13-cv-04115-WHO, 2017 WL 235052, *16 (N.D. Cal. Jan. 19, 2017) (denying *Daubert* motion on the grounds that “Mangum’s opinions—based on anecdotal evidence, correlations on prices, and his regression model—provide a reliable and accepted source of classwide proof of impact.”). Thus, Dr. Mangum’s opinions are “the product of reliable principles and methods” that he “reliably applied . . . to the facts of the case.” Fed. R. Evid. 702(c)-(d).

Dr. Mangum’s opinions satisfy each of the *Daubert* criteria. His regression models (1) can be (and have been) tested, (2) have been subject to extensive peer review and publication, (3) have known rates of error, and (4) and are well-accepted in assessing impact and damages in antitrust cases. *Daubert*, 509 U.S. at 593-94. These opinions will assist the Court in analyzing “the criteria for class certification and the current state of the evidence” (*Taqueria El Primo*, 577 F. Supp. 3d at 985) and Dr. Mangum’s “specialized knowledge will help the trier of fact to understand the evidence” Fed. R. Evid. 702(a).

B. Dr. Mangum’s Opinions That The Structure Of The Pork Packing Market Was Conducive To The Formation And Success Of The Alleged Conspiracy Are Based on Sufficient Facts and Data And Will Assist the Court In Its Class Certification Analysis

Defendants first challenge the admissibility of Dr. Mangum’s expert opinions on the incorrect ground that he “is neither relying on nor applying economic methods (*i.e.*, his area of expertise)” ... but is instead “relying on pleadings and documents produced in this case ...” Mot. at 9. Second, they argue that Dr. Mangum’s analyses of the pork industry are outside his area of expertise. Defendants’ criticisms are not grounds to exclude Dr. Mangum’s opinions.

1. Dr. Mangum Appropriately Relied on Record Evidence in Conducting His Analyses and Forming His Opinions.

First, contrary to Defendants’ argument, Dr. Mangum does far more than merely recite the factual record in the case. Rather, Dr. Mangum studied the characteristics of the pork packing industry to determine whether the industry is conducive to the successful implementation and execution of the alleged conspiracy. Mangum Report, ¶ 93. This included an analysis of the record evidence. *Id.*, ¶ 17. His opinion that “the structure of the pork packing market was conducive to the formation and success of the alleged conspiracy . . . flows from numerous facts” outlined in his report, including that:

- The factors that account for wholesale prices of pork products. *Id.*, ¶¶ 32-34.
- The factors that affect demand for pork. *Id.*, ¶¶ 35-35.
- The supply chain of the US pork market. *Id.*, ¶¶ 37-45.
- Concentration in the pork packing market. *Id.*, ¶¶ 46-49.
- Consolidation in the hog raising market and the supply of hogs. *Id.*, ¶¶ 50-55.

- How cutting sow herds and pigs during the conspiracy period affected the pork supply. *Id.*, ¶¶ 74-78.
- Defendants’ reliance on Agri Stats reports to make business decisions. *Id.*, ¶¶ 148-57.

Experts routinely analyze record evidence regarding the industry they are studying in conducting their economic analyses,² and Defendants’ contention to the contrary is not even supported by their own experts. During her deposition, Dr. Haider agreed that Dr. Mangum’s reliance on facts and evidence is appropriate: “I think it’s proper for Dr. Mangum to rely on documents, to review them, to even come up with hypotheses that he needs to test. ... [D]ocuments, deposition testimony, public information, and then, of course, the data, they’re all very useful to educate yourself about facts and about the industry.” Reply Declaration of Bobby Pouya in Support of Direct Purchaser Plaintiffs’ Motion for Class Certification (“Pouya Reply Decl.”), Ex. 2 at 119:21-120: 17. Similarly, Dr. Mintert did not dispute that economists such as Dr. Mangum are qualified to render opinions regarding the pork industry. *See* Pouya Reply Decl., Ex. 3 at 29:19-32:15. Indeed, in her own report,³ Dr. Haider recounted numerous facts related to hog supply (Haider Report, ¶¶ 57-61, 75), pork processing and slaughter capacity (¶¶ 63-64); marketing contracts (¶¶ 67-70), and export levels (¶¶ 100-104). Pouya Reply Decl., Ex. 2 at 65:5-24; Haider Report, App’x B (listing “Materials Relied Upon”). Dr. Haider testified that she

² Indeed, the Federal Rules of Evidence *require* that expert opinions be “based on sufficient facts or data.” Fed. R. Evid. 702(b); *see also* Fed. R. Civ. P. 26(a)(2)(B)(ii) (“[t]he report *must* contain (ii) the facts or data considered by the witness in forming them” (emphasis added)).

³ August 24, 2022 Expert Report of Dr. Laila Haider (ECF No. 1442-001) (“Haider Report”).

“reviewed a whole host of information to educate myself about the pork industry,” and that she relied on documentary evidence for purposes of preparing this report. Pouya Reply Decl., Ex. 2 at 65:5-67:15. Dr. Haider further testified that she conducted interviews of five Smithfield employees “to learn more about the pork industry, learn about the background” including “things to do with industry events, ... pricing, customers, hog procurement, things of that nature.” *Id.*, at 70:1-73:6. Similarly, Dr. Mintert focused the entirety of his report on a discussion of hog and pork industry characteristics. *See, generally*, August 24, 2022 Expert Report of Dr. James Mintert (ECF No. 1442-002) (“Mintert Report”).

Courts routinely consider expert reports that include a discussion of the facts related to the industry at issue. In *In re Processed Egg Products Antitrust Litigation*, 81 F. Supp. 3d 412 (E.D. Pa. 2015), the court rejected defendants’ argument that the court should exclude the expert’s recitation of the factual record on the ground that “[the expert] is, as experts regularly do, relating his factual findings so that in subsequent sections of his report, he can test whether the data are consistent with that theory of the case.” *Id.* at 423. It is a “sound economic practice to review the factual record and formulate a hypothesis that can be tested using economic theory,” so “examination of the factual record is necessary to determine which tests to run and to confirm that the stories drawn from the data and from the factual record are consistent.” *Id.* at 424. Similarly, this Court recently considered the same argument Defendants make here and rejected it:

The Court concurs that merely narrating facts is not proper expert testimony. But that is not what Hochman’s expert report does here. Instead, Hochman’s recitation of the facts is in order to support his expert opinion, which is required under Rule 26. Fed. R. Civ. P. 26(2)(B)(ii). Defendants do not provide any sort of guideline for the

Court to assist in determining when an expert's recitation of the facts becomes excessive. Certainly here, Hochman's use of the factual record is not excessive because the facts are used as support for his opinions and are often offered in combination with his expert analysis. The Court will not impose a rule that would leave parties guessing as to whether the Court will exclude opinions because they fail to comply with Rule 26 or because they contain too many facts.

Furnituredealer.net, Inc. v. Amazon.com, Inc., Civil No. 18-232 (JRT/HB), 2022 WL 891462, at *18 (D. Minn. Mar. 25, 2022); *Synergetics, Inc. v. Hurst*, 477 F.3d 949, 955 (8th Cir. 2007) (affirming district court's ruling denying motion in limine to exclude expert opinions and holding that "[a]s a general rule, the factual basis of an expert opinion goes to the credibility of the testimony, not the admissibility, and it is up to the opposing party to examine the factual basis for the opinion in cross-examination.").

Second, Dr. Mangum's analyses are within his area of expertise. There is no dispute that Dr. Mangum is a qualified economist, and his education and credentials are more than sufficient to support his opinions. *See, generally*, Mangum Report, App'x A. Like Dr. Mangum, Dr. Haider does not hold herself out as an agricultural economist, but nonetheless testified that she is qualified to render the opinions in her report: "I don't consider myself an agricultural economist. But for the purposes of the work here, I, obviously, am perfectly qualified to do what I have done." Pouya Reply Decl., Ex. 2 at 38:25-39:20. Similarly, Defendants' other expert, Dr. Mintert, testified that trained economists such as Drs. Haider and Mangum are qualified to render economic opinions regarding the pork industry.⁴ Like

⁴ To the extent that Defendants seek to emphasize that Dr. Mintert is an agricultural economist, this characterization does not apply to Dr. Haider. Dr. Haider describes herself as "an economist that analyzes economic issues in ... different industries." Pouya Reply Decl., Ex. 2 at 48:8-9. Furthermore, Dr. Mintert testified that agricultural economics is

Dr. Haider, Dr. Mangum’s qualitative analyses of the pork industry form the basis of the quantitative analyses that follow.⁵ This analysis is relevant to Dr. Mangum’s assignment to “[a]nalyze whether the pork industry in the United States had structural characteristics over the relevant timeframe that economic theory would suggest made it conducive to the formation and success of the alleged conspiracy.” Mangum Report, ¶ 14. He concluded that “[a]s a result of the structure and characteristics of the pork industry, DPPs would have had very limited, if any, ability to avoid price impacts from the alleged conspiracy. In particular, because of these structural characteristics, the ability to buy pork from alternative sellers or switch to alternative products to avoid price impacts would be very limited, if any.” *Id.*, ¶ 17. An expert is permitted to testify “as to whether an industry’s market structure makes it particularly susceptible to collusion.” *Processed Egg Products*, 81 F.Supp.3d at 421.⁶

In sum, to the extent an expert, “after reviewing the documentary record, opines as to whether defendants’ behavior is consistent with collusion, this is permissible expert

merely “the study of economics applied to agriculture.” Pouya Reply Decl., Ex. 3 at 22:1-7.

⁵ For example, as discussed below, Dr. Mangum’s analysis of the record evidence is directly relevant to his benchmark model.

⁶ To the extent Defendants are concerned that Dr. Mangum is seeking to invade the province of the jury, they are “free to monitor [his] testimony at trial to ensure that he does not simply and impermissibly lend an expert imprimatur to plaintiffs’ position on disputed facts, but that he instead testifies about how particular conduct relates to price-fixing.” *In re Urethane Antitrust Litig.*, No. 04-1616-JWL, 2012 WL 6681783, at *3 (D. Kan. Dec. 21, 2012).

opinion.” *In re Rail Freight Fuel Surcharge Antitrust Litig.*, 292 F. Supp. 3d 14, 52 (D.D.C. 2017).⁷

2. Dr. Mangum’s Analysis of the Pork Market is Consistent with DPP’s Theory of the Case.

Defendants next argue that Dr. Mangum’s opinions are unreliable because they analyze the wrong market and are thus “at odds” with DPPs’ theory of the case. Mot. at 24-34. Defendants are wrong.

First, Defendants’ criticisms ring hollow because their own experts, Drs. Haider and Mintert, perform the same analysis in their reports. Notably, the primary purpose of Dr. Mintert’s report is to analyze “the fundamental structure of the hog and pork industries.”

⁷ Defendants’ citations do not compel a different conclusion. In *Grasshopper House, LLC v. Clean & Sober Media LLC*, Dr. Mangum’s opinions were challenged in a motion in limine to exclude testimony at trial, not at the class certification phase. No. 2:18-cv-00923-SVW-RAO, 2019 WL 12074086, at *2 (C.D. Cal. July 1, 2019). The court found that Dr. Mangum’s testimony would be admissible during the first phase of trial “provided that the underlying information upon which Dr. Mangum relies is reliably established through testimony and/or documentary evidence during the second phase of trial.” *Id.* at 3. After engaging in voir dire during trial, the court concluded that the sole basis for Dr. Mangum’s opinion (an email) was insufficient to permit such testimony. *Id.* In contrast, here Dr. Mangum’s impact analysis is based on the extensive record evidence produced in this case, much of it from Defendants, not a single email. Moreover, Dr. Mangum has explained how the factual evidence related to the pork industry is necessary to his impact analysis. In *Robroy Industries-Tex., LLC, v. Thomas & Betts Corp.*, the court excluded portions of an expert report that comprised of “a summary of the defendant’s theory of the case, supported by citations to witness depositions” but held that background material in expert reports “may be admissible through the experts’ testimony as necessary introductory information explaining the basis for their opinions.” No. 2:15-CV-512-WCB, 2017 WL 1319553, at *3 (E.D. Tex. Apr. 10, 2017). Here, Dr. Mangum has not provided a “summary of [plaintiffs’] theory of the case. Rather, he has, appropriately, provided background information related to the pork industry to “explain[] the basis [of his] opinions.” *Id.*

See, generally, Mintert Report; *see also* ¶ 6.⁸ In addition, Dr. Haider dedicates substantial portions of her report to analyzing hog production and pork processing. *See, e.g.*, Haider Report, Section V at pp. 24-66. Moreover, Dr. Mangum’s reliance on evidence related to the pork packing market is relevant to and consistent with DPP’s allegations and theory of the case that Defendants artificially inflated the price of pork products in the United States. *See, e.g.*, Mangum Report, ¶¶ 7, 12-13.

In addition, contrary to Defendants’ assertion, Dr. Mangum *does* evaluate evidence related to Defendants’ actions to reduce sow herds and pork production as part of the alleged conspiracy. *See, e.g.*, Mangum Report, Section II.D; Mangum Reply Report, ¶¶ 83-86. Defendants’ market structure criticisms mostly ignore Dr. Mangum’s conclusions regarding the structural characteristics of the pork market and instead focus on the upstream hog market. As Dr. Mangum explains in his reply report, “[w]hile I disagree with Defendants’ experts’ overarching conclusions about Defendants’ ability to exert influence in the hog market, it is also important to note that their focus on the upstream hog market is a red herring, because the pork market, and specifically the prices paid for pork products, is the focus of the allegations and my analysis.” Mangum Reply Report, ¶ 17. The alleged conspiracy pertains to prices for pork products, not hogs. Thus, Dr. Mangum’s focus on the pork market is consistent with DPPs’ theory of the case.

⁸ Defendants may attempt to distinguish Dr. Mintert based on his experience in “agricultural economics.” However, this moniker merely denotes economics as applied to the agricultural industry. *See* Pouya Reply Decl., Ex. 3 at 22:1-7. This is exactly what Dr. Mangum has done in this case and, as set forth herein, he is qualified to do so.

Defendants' citation to *Concord Boat Corp. v. Brunswick Corp.*, 207 F.3d 1039 (8th Cir. 2000), is distinguishable. In *Concord*, the plaintiff boat builders sued the defendant engine manufacturers for monopolizing the market and charging supra-competitive prices for boat engines. *Id.* at 1043. The case was tried before a jury for 10 weeks, with both parties introducing over 800 exhibits and calling approximately 45 witnesses. *Id.* The jury returned a verdict for the plaintiffs and defendants argued on appeal that the evidence was insufficient as a matter of law to enable a reasonable jury to find that defendants monopolized the market. *Id.* Defendants argued that the plaintiffs' expert's testimony should have been excluded because it was contrary to undisputed record evidence and because it did not separate lawful from unlawful conduct. *Id.* at 1055. Here, the Court does not have the benefit of a full record or factual findings of a jury. In addition, unlike the plaintiffs' expert in *Concord*, Dr. Mangum has proposed a model that distinguishes between price effects from the alleged conspiracy and price effects from other factors. *See* Mangum Report, ¶¶ 214-218, 235.

Defendants' argument also finds no support in *Champagne Metals v. Ken-Mac Metals, Inc.*, 458 F.3d 1073 (10th Cir. 2006). There, the plaintiff, an aluminum distributor, sued its competitors for engaging in a horizontal group boycott. *Id.* at 1078. Defendants' motion for summary judgment and motion to exclude plaintiff's expert were granted, and an appeal ensued. *Id.* The plaintiff's expert economist opined regarding the defendants' conduct in the "upstream" market in which they *purchased* aluminum in one form but based his analysis on evidence related to the "downstream" market in which the distributors *sold* aluminum in a different form. *Id.* at 1079. Notably, the Tenth Circuit found that "the

district court's criticism was not that the explanation offered by Dr. Murry for looking to the downstream market was unreasonable, but rather that Dr. Murry offered no explanation at all." *Id.* Here, Dr. Mangum has provided an explanation for using a pricing model to demonstrate impact from Defendants' conspiracy to fix pork prices. Dr. Mangum analyzed Defendants' conduct in reducing the domestic supply of pork as part of the alleged conspiracy and discussed evidence that the sow herd reductions were not explained by normal supply and demand factors. Mangum Report, Section III.B. Dr. Mangum's overcharge analysis further confirmed artificially lower levels of domestic pork supply due to a finding of inflated prices. *Id.*, ¶¶ 82-83, Fig. 16; ¶¶ 170-179. Thus, Dr. Mangum concluded that he did not need to calculate but-for levels of hog supply to determine impact or damages resulting from the alleged conspiracy. Mangum Reply Report, ¶¶ 64, 82-94.

Next, Defendants argue that Dr. Mangum's opinions are unreliable because they rely on characteristics of the pork market that Defendants disagree with. Defendants' identification of factual disputes regarding the concentration of the pork supply market, the level of vertical integration of the Defendants, and processing capacity (Mot. at 28-34) are not appropriate to resolve at the class certification stage of litigation. *Zurn*, 644 F.3d at 611 ("[w]e have never required a district court to decide conclusively at the class certification stage what evidence will ultimately be admissible at trial."). Rather, "when facts are in dispute, experts sometimes reach different conclusions based on competing versions of the facts. The emphasis in the amendment on 'sufficient facts or data' is not intended to authorize a trial court to exclude an expert's testimony on the ground that the court believes

one version of the facts and not the other.” Fed. R. Evid. 702 advisory committee’s notes (2000).

First, Defendants’ argument that no defendant is fully integrated (Mot. at 30-31) is neither here nor there. As Dr. Mangum explained, “[v]ertical integration may ultimately enhance a firm’s market power, but it is not necessary for a firm to be fully vertically integrated in order to have market power in the downstream market.” Mangum Reply Report, ¶ 35. Dr. Haider agreed during her deposition that Defendants are competitors in the pork market despite having various degrees of vertical integration, and that vertical integration is not necessarily required for a firm to have market power. Pouya Reply Decl., Ex. 2 at 310:12-311:2.

Second, Defendants’ argument that their hog purchasing practices do not confer them with market power over domestic pork supply (Mot. at 31-33) mischaracterizes the evidence and Dr. Mangum’s opinions. Defendants directly control the supply of hogs because they are among the largest hog producers in the United States. Mintert Report, Ex. 5. As Dr. Mangum points out, Defendants had the ability to reduce supply in order to increase prices based on the hogs that they grow. Mangum Reply Report ¶¶ 65, 72. In addition, Defendants can influence the hog supply both by limiting how much they purchase and by controlling their own Pork production capacity. Mangum Report ¶¶ 17, 80; Mangum Reply Report ¶¶ 10, 59. Thus, Dr. Mangum opines that Defendants’ status as the major purchasers of hogs raised in the United States allowed them to exert significant power over pork supply. Mangum Reply Report ¶¶ 46-47.

In addition, Defendants’ criticisms that Dr. Mangum “cherry-picked” a handful of contracts to review are not well taken.⁹ Defendants argue incorrectly that Dr. Mangum failed to review the publicly available marketing contracts in the USDA’s Swine Contract Library. Mot. at 32. Dr. Mangum responded that “the ‘library’ is not a comprehensive collection of contracts, but rather ‘a catalog of the types of contracts offered by packers to swine producers.’” Mangum Reply Report ¶ 50. Indeed, due to statutory confidentiality restrictions, the inaptly named “library” does not include “either the example contracts or other proprietary information.” See Swine Contract Library FAQ (available at <https://www.ams.usda.gov/rules-regulations/packers-and-stockyards-act/regulated-entities/swine-contract-library-faq>) (last viewed Nov. 16, 2022).

Third, Defendants criticize Dr. Mangum for “flat-out ignor[ing]” facts showing an overall increase in domestic slaughter capacity during the Conspiracy Period. Mot. at 33-34. Quite to the contrary, Dr. Mangum agrees that Defendants’ capacity and output increased over time, however, he opines that “Defendants’ experts are incorrect in their conclusion that increased production or capacity are inconsistent with the allegations in this case.” Mangum Reply Report, ¶¶ 87, 88. Despite this overall increase in production,

⁹ Dr. Haider admits that she “cherry-picked” evidence to rely on in preparing her report. While she testified that she had access to the entire record of deposition transcripts taken in this case thus far, she chose to rely on those that “provided information that was helpful to ... provide support for ... a particular claim or to provide a particular fact.” Pouya Reply Decl., Ex. 2 at 75:6-77:23. Moreover, Dr. Haider admitted that Defendants’ counsel selected five individuals from Smithfield for Dr. Haider to interview “based on the types of information that my team and I said we were interested in learning more about.” *Id.*, at 70:1-73:6. Dr. Mintert testified that he only reviewed a handful of contracts that were selected for him by Defendants’ counsel. Pouya Reply Decl., Ex. 3 at 96:20-98:20.

Dr. Mangum’s analyses show that “the amount of pork that was actually available domestically for consumers remained below pre-conspiracy levels until 2018 ... because most of the growth in U.S. pork production was diverted to export markets.” Mangum Reply Report, ¶ 89. Moreover, “As a matter of economics, if prices were elevated above competitive levels, supplies of pork were necessarily lower than they would have been at competitive levels.” *Id.*, ¶ 95. Neither of Defendants’ experts responded to this analysis in their respective reports. *Id.*, ¶ 89.

Defendants’ disagreement with the facts and evidence supporting Dr. Mangum’s opinions is not grounds to exclude them. Where, like here, there is “a rational connection between the data and the opinion,” arguments that the “expert[] [reli[ed] on faulty information is a matter to be explored on cross-examination; it does not go to admissibility.” *In re Dealer Management Sys. Antitrust Litig.*, 581 F. Supp. 3d 1029, 1046 (N.D. Ill. 2022) (citation omitted); *see also Daubert*, 509 U.S. at 596 (“the traditional and appropriate means [of] attacking” evidence is not exclusion but rather “[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof....”).

Dr. Mangum’s opinions and analysis of the pork market will aid the Court in the predominance inquiry regarding antitrust impact. *See, e.g., In re Potash Antitrust Litig.*, 159 F.R.D. 682, 695-96 (D. Minn. 1995) (finding common impact based on plaintiffs’ expert evidence regarding the potash market regarding the structure of the market, which made it susceptible to cartelization).

C. Dr. Mangum’s Opinions That All Or Substantially All DPPs Were Impacted By The Alleged Conspiracy Are The Product Of Reliable And Well-Accepted Econometric Analyses

Dr. Mangum used reliable, scientific methods to reach his conclusions that defendants’ anticompetitive conduct impacted DPPs: (a) analyses showing that Defendants’ prices for similar products across geographies, customers, and product types are highly correlated; and (b) a multiple regression “dummy variable” analysis showing positive and statistically significant price increases for each of the six pork products at issue.

Defendants do not dispute that regression analysis is a type of scientific evidence that is admissible in antitrust cases to evaluate impact and estimate damages resulting from the alleged conspiracy. Dr. Haider testified that she agrees with Dr. Mangum’s use of regression analysis (Pouya Reply Decl., Ex. 2 at 129:23-130:5) and has, in fact, published an article stating that “[r]egression analysis is a statistical methodology that is frequently used in antitrust cases to estimate but-for prices and thereby to evaluate injury and damages suffered by class members resulting from the alleged anticompetitive conduct.” Pouya Reply Decl., Ex. 2 at 132:18-134:5. Instead, Defendants challenge the inputs in Dr. Mangum’s regression model and its results. However, courts categorically reject such challenges at the class certification stage because the focus of a *Daubert* analysis is “solely on principles and methodology, not on the conclusions that they generate.” *Daubert*, 509 U.S. at 595.

Dr. Mangum used a reduced-form regression model to estimate overcharges of pork products. Mangum Report, ¶ 218. This approach is a “widely used econometric technique

for determining whether prices were higher during a class period than they otherwise would have been without anti-competitive conduct.” *In re Urethane Antitrust Litig.*, 768 F.3d 1245, 1260-61 (10th Cir. 2014); *see also In re Potash*, 159 F.R.D. at 697-98; *Broiler Chicken*, 2022 WL 1720468, at *10; Mangum Report, ¶ 218 and n.476. To appropriately assess the impact of the alleged conspiracy, Dr. Mangum proposes an overcharge model that relies on the behavior of relevant market measures (*i.e.*, price, supply, and demand) inside and outside of the alleged conspiracy period. Dr. Mangum included control variables to account for supply and demand factors which are all non-conspiratorial, and “the inclusion of a dummy variable to measure the effect of the alleged conspiracy therefore appropriately isolates them from ‘conspiratorial’ factors.” Mangum Reply Report, ¶¶ 138-140. Dr. Haider agreed that it is standard practice to use a dummy variable in a regression model. Haider Tr., at 139:5-140:6.

Dr. Mangum’s regression model uses a dependent variable (the monthly average price paid by a particular customer based on transactional sales data from Defendants) and supply and demand variables to account for non-collusive factors that the evidence and economic theory indicate would impact prices for pork products. Mangum Report, Section V.D. Using the benchmark model, “prices during the period alleged to be affected by the conspiracy are compared to prices during a “benchmark” period, which is assumed to be unaffected by the conspiracy.” Mangum Report, ¶ 229. Dr. Mangum’s regression model shows that of the 4,550 customers in the regression data during the Class Period, 4,535 (over 99%) made at least one purchase at a price above the predicted but-for level. The remaining small group of customers (less than 1%) have less than 0.001% of all relevant

sales. *Id.*, ¶¶ 253–256. Thus, Dr. Mangum’s benchmark model appropriately estimates the impact of the conspiracy on pork prices.¹⁰

Thus, the methods used by Dr. Mangum have been peer-reviewed and published, and Defendants do not claim otherwise. “[S]ubmission to the scrutiny of the scientific community” can be a strong indicator of reliability “because it increases the likelihood that substantive flaws in methodology will be detected.” *Daubert*, 509 U.S. at 593; *Broiler Chicken*, 2022 WL 1720468, *10 (“If an expert witness uses regression analysis in estimating antitrust damages, one can hardly claim that the methodology is unreliable and therefore the expert’s testimony should not be excluded on *Daubert* grounds”) (citations omitted); *see also* Pouya Reply Decl., Ex. 2 at 136:15-137:24 (agreeing that “reduced-form equations are perhaps the most commonly employed in price-fixing cases.”).

D. At Most, Defendants’ Criticisms of Dr. Mangum’s Opinions Go to Their Weight, not Admissibility.

Defendants offer several critiques of Dr. Mangum’s regression modeling, but none is sufficient to exclude Dr. Mangum’s opinions. In *Zurn*, the district court conducted a tailored *Daubert* analysis and denied the motions to strike the plaintiffs’ experts. 644 F.3d at 614. The defendants did not dispute the expert’s qualifications or methodology, but

¹⁰ Defendants’ assertion that Dr. Mangum “acknowledges that his results may be sensitive to the treatment of 2008” is not accurate. Mot. at 17. In paragraph 232 of his report, Dr. Mangum states that “the data is consistent with the allegation that Defendants began conspiring by early 2009 but that – due to the seasonality of farrowing cycles and hog production—the early effects of the alleged conspiracy did not begin until the fall harvest.” Accordingly, using “January 2009 as the starting point for my Conspiracy Period indicator variable . . . may be a conservative starting point for the analysis.” Mangum Report at p. 232, n.500.

rather argued that his opinions were not based on “sufficient facts or data.” *Id.* The Eighth Circuit rejected upheld the district court’s ruling, finding that the defendants’ arguments that the expert used “an unrealistic amount of strain in his ‘U-bend’ testing which affected his overall conclusion” are not sufficient to sustain a *Daubert* challenge because “objections to generally reliable scientific evidence go to its weight, not its admissibility.” *Id.* (citations omitted). This Court should reach the same conclusion here where Defendants challenge the inputs in and results of Dr. Mangum’s otherwise reliable methodologies.

1. Dr. Mangum’s Selection of the Benchmark Period is Supported by DPPs’ Allegations, Record Evidence and Well-Accepted Economic Principles.

Defendants’ argument that Dr. Mangum’s regression model is unreliable because of his selection of the benchmark period has no merit. Mot. at 13-18. As courts have recognized, there is “no authority for excluding an expert’s damages model” based on a challenge to the methodology used to determine the benchmark period. *In re Blood Reagents Antitrust Litig.*, MDL No. 09–2081, 2015 WL 6123211, at *12 (E.D. Pa. Oct. 19, 2015). Rather, “criticisms ... of potential benchmark years go to the weight of [expert] opinions and not their admissibility.” *Urethane*, 2012 WL 6681783, at *6; *Stecyk v. Bell Helicopter Textron, Inc.*, 295 F.3d 408, 414 (3rd Cir. 2002) (to the extent an expert’s benchmark determination rests on “facts and assumptions as the basis for his opinion,” the opposing party “can highlight those weaknesses through effective cross-examination”); *Broiler Chicken*, 2022 WL 1720468, at *11 (defendants’ criticisms “might be relevant to the evidentiary weight of Mangum’s testimony, but it is not a reason to question the reliability of his method”).

Defendants’ arguments ring particularly hollow for several reasons. First, Dr. Mangum’s benchmark period of January 2005 through December 2008 is supported by DPPs’ allegations, the evidence, and well-accepted economic principles. Regression methodology requires an expert to identify a benchmark period free of anticompetitive conduct and a damages period when the allegedly anticompetitive conduct occurred. “The purpose of separating conduct free periods and conduct periods is to create a benchmark conduct free period as ‘an evidentiary foundation for inferring what the prices would have been in the [conduct] period[s] but for the [alleged] illegal activity.’” *In re Mushroom Direct Purchaser Antitrust Litig.*, Master File No. 06–0620, 2015 WL 5767415, *7 (E.D. Pa. July 29, 2015). Dr. Mangum noted that USDA production data are consistent with the allegation that Defendants had begun conspiring by early 2009. “Domestic pork supply dropped slightly during 2008, but rebounded somewhat through the two quarters in the middle of 2009 until mid-2012. However, domestic pork supplies fell every quarter starting in late 2009 until mid-2012. In other words, this data is consistent with the allegation that Defendants began conspiring by early 2009, but that—due to the seasonality of farrowing cycles and hog production—the early effects of the alleged conspiracy did not begin until the fall harvest.” Mangum Report, ¶¶ 230–232.

Second, Defendants do not identify any collusive conduct that occurred in 2008. Dr. Haider could not identify any and did not provide any opinion on what an appropriate benchmark period would be. Pouya Reply Decl., Ex. 2 at 144:5-146:23 (“I am not separately opining on a benchmark period.”). Instead, Dr. Haider’s opinions rest on the false premise that Dr. Mangum “acknowledges that his results may be sensitive to the

treatment of 2008.” Mot. at 17; Haider Report, ¶ 132. Dr. Mangum did not opine that 2008 was “tainted,” but rather “noted that the allegations include actions that could plausibly have started impacting prices prior to early 2009, and that my model was constructed to assume that was not the case.” Mangum Reply Report, ¶ 149. In *Packaged Seafood*, the district court certified the class finding, *inter alia*, that when the benchmark period is based on record evidence, the more reliable the expert’s analysis is. 332 F.R.D. 308, 326 (S.D. Cal. 2019) (conspiracy period based on the expert’s “analysis of the record evidence in the case ... bolster[ed] the reliability of the [regression] model”); *see also In re Linerboard Antitrust Litig.*, 497 F. Supp. 2d 666, 683-84 (E.D. Pa. 2007) (expert identified “a more competitive period, presumably free of unlawful conduct.”).

The cases relied upon by Defendants do not support a different conclusion. The district court’s opinion in *Persian Gulf, Inc. v. BP West Coast Products, LLP*, --- F. Supp. 3d ----, No. 15-cv-1749-JO-AGS, 2022 WL 4830698 (S.D. Cal. Sept. 30, 2022) (ECF No. 1531, Ex. A), demonstrates the appropriateness of Dr. Mangum’s benchmark analysis. There, the court granted in part defendants’ motion to exclude expert regression analysis which included a benchmark period that was not free of anticompetitive conduct. *Id.* at *1. The court found that one of the experts disregarded this “basic econometric principle” by selecting a “clean” period that contained more than four years of anticompetitive conduct. *Id.* at *36. The court went on to state that this “incongruity between the pleadings and the expert’s analysis would not pose a methodological problem if [the expert] chose a benchmark period based on post-discovery evidence instead.” *Id.* Dr. Mangum’s selection

of the benchmark period is consistent both with DPP's allegations *and* evidence gleaned during discovery.

In *In re Domestic Drywall Antitrust Litig.*, the court opined that “the benchmark period has been conceptually defined as ‘normal’ years against which an antitrust plaintiff compares alleged ‘conspiracy years’ to show the impact of the conspiracy.” 322 F.R.D. 188, 224 (E.D. Pa. 2017). Defendants criticized the benchmark period and lobbied for a longer period. The court rejected the argument, because the time period “just adjacent to the class period that serves as an appropriate, reliable benchmark.” *Id.* at 225. Hence, the district court’s use of the word “normal” refers to a time when there is no conspiratorial conduct. Defendants’ suggestion that there was nothing “normal” about 2008 is not relevant to the benchmark period analysis. In econometric terms, 2008 is “normal” because it is the year immediately preceding the alleged conspiracy, or a “clean” period in which DPPs do not allege anticompetitive conduct. Moreover, Dr. Mangum’s model includes variables that directly control for industry- and economy-wide events that took place during 2008. Mangum Reply Report ¶¶ 147-154.

In *Reed Const. Data Inc. v. McGraw-Hill Cos., Inc.*, the court found that “[w]hen constructing a benchmark statistic, the regression analyst may not ‘cherry-pick’ the time-frame or data points so as to make her ultimate conclusion stronger.” 49 F. Supp. 3d 385, 400 (S.D.N.Y. 2014). Defendants argue that Dr. Mangum *should have* “cherry-picked” the benchmark period and excluded 2008 even though it is a “clean” year. The court’s decision in *In re LIBOR-Based Fin. Instruments Antitrust Litigation* further illustrates why Defendants’ argument is wrong. There, the court rejected the inclusion of the year 2013 in

the expert’s clean period “where we know that the inclusion of 2013 in Dr. Seyhun’s clean periods is a significant driver of his result.” 299 F. Supp. 3d 430, 484 (S.D.N.Y. 2018). That is exactly what Dr. Haider’s analysis shows. Her inclusion of 2008 in the conspiracy period, a “clean period,” yields nonsensical results (Mangum Reply Report, ¶¶ 152-154) and thus constitutes the “cherry-picking” that Defendants accuse Dr. Mangum of. Dr. Mangum’s inclusion of 2008 in the benchmark period is appropriate.¹¹ *See, e.g., Broiler Chicken*, 2022 WL 1720468, at *9 (rejecting defendants’ expert’s opinion that “the Great Recession” was one of “the real causes for the decrease in supply” and accepting Dr. Mangum’s use of a regression analysis to identify the damages period); *Packaged Seafood*, 332 F.R.D. at 322-23.

Use of a “benchmark” model is “standard practice in antitrust analysis.” Mangum Report, ¶ 229 and n.497; Mangum Reply Report, ¶¶ 147-154; Pouya Reply Decl., Ex. 2 at 144:5-145:15. Dr. Mangum’s similar use of a “benchmark” model in *Broiler Chicken* was accepted by the district court as reliable to show that anticompetitive effects were capable of proof on a classwide basis. 2022 WL 1720468, at *13. Defendants may challenge the facts and assumptions underlying Dr. Mangum’s benchmark model on cross-examination, but that challenge cannot support a *Daubert* motion. *Stecyk*, 295 F.3d at 414.

¹¹ Contrary to Defendants’ arguments, Dr. Mangum does not ignore the effects of the Great Recession. Rather, Dr. Mangum’s model includes multiple variables that account for the effects of the Great Recession in 2008, including GDP, the consumer price index, prices of competing substitutes, and seasonal variables. Mangum Reply Report, ¶¶ 147-151. Dr. Haider agrees that Dr. Mangum’s model includes these variables and although she does not agree with all of his choices, she admits that economists must make decisions about which variables to include in regression models. Pouya Reply Decl., Ex. 2 at 152:3-156:8.

2. Dr. Mangum's Regression Model Appropriately Includes Explanatory Variables that Control for Non-Conspiratorial Factors that Influence Pork Prices.

Dr. Mangum's model uses numerous explanatory variables, which are "non-conspiratorial" in nature and allow Dr. Mangum to measure the conspiracy's impact on pork prices by isolating it from non-conspiratorial factors. Mangum Reply Report, ¶¶ 138-140. Dr. Haider agreed that it is standard practice to use explanatory variables in regression models. Pouya Reply Decl., Ex. 2 at 152:3-153:4. Defendants' argument that Dr. Mangum's model fails to include the correct variables is not grounds to exclude his opinions.

The Supreme Court has confirmed that the expert's selection of the variables to include in a regression analysis is a question that goes to the weight of the analysis rather than to its admissibility. *Bazemore v. Friday*, 478 U.S. 385, 400 (1986) (reversing lower court's exclusion of regression analysis based on its view that the analysis did not include proper selection of variables). The Eighth Circuit is in accord. "[A] regression analysis does not become inadmissible as evidence simply because it does not include every variable that is quantifiable and may be relevant to the question presented ... [I]t is for the finder of fact to consider the variables that have been left out of an analysis, and the reasons given for the omissions, and then to determine the weight to accord the study's results." *Maitland v. Univ. of Minn.*, 155 F.3d 1013, 1017 (8th Cir. 1998). Dr. Haider agreed that economists must make decisions about which variables to include in their regression models and that experts often disagree regarding how those decisions are made. Pouya Reply Decl., Ex. 2 at 152:17-20. "When parties dispute 'the specific numbers' to be used

in an otherwise reliable scientific analysis, the ‘alleged flaws ... are of a character that impugn the accuracy of [the expert’s] results, not the general scientific reliability of his methods.’” *Zurn*, 644 F.3d at 614-15 (citation and internal quotations omitted).

3. Defendants’ Criticize the Results of Dr. Mangum’s Analyses, Not His Methodologies.

Dr. Mangum’s regression models, which estimate positive and statistically significant overcharges for each product at issue, establish that all or virtually all DPPs sustained an overcharge. Defendants do not challenge Dr. Mangum’s analyses as unscientific or untested and it cannot reasonably be disputed that Dr. Mangum’s methods are sound. Defendants’ criticisms of the results of Dr. Mangum’s analyses are not grounds to exclude his opinions.

First, Dr. Haider’s own testing of Dr. Mangum’s overcharge regression model shows positive, statistically significant overcharges for five of the six pork products (shoulders, ribs, bacon, ham, and loins) during the proposed Class Period.¹² Mangum Reply Report, ¶ 136; Haider Report, Ex. 12; Pouya Reply Decl., Ex. 2 at 150:8-152:1. While Dr. Haider’s results estimate a negative overcharge for pork belly, Dr. Mangum notes that very few Defendants contributed meaningful quantities of pork belly data to the benchmark period.¹³ Dr. Haider’s finding of large and statistically significant overcharges for the other

¹² When asked whether Dr. Mangum’s overcharge regressions are capable of being tested, Dr. Haider responded, “Yes. And that is why I have tested them.” Pouya Reply Decl., Ex. 2 at 150:2-6.

¹³ Mangum Reply Report, ¶ 119, 153. Dr. Haider did not deny this fact during her deposition. Pouya Reply Decl., Ex. 2 at 151:11-16.

pork products supports a finding that Dr. Mangum's model can be used to demonstrate impact on a classwide basis.

Second, Defendants' argument that Dr. Mangum's analysis veils differences in bargaining power of direct purchasers because it relies on "a purported 'average overcharge'" (Mot. at 20) is incorrect and not supported by relevant case law. Dr. Mangum does not posit one "average overcharge." Rather, his regression model set forth *six* different overcharges during the Class Period. Mangum Report, Fig. 75; Mangum Reply Report ¶¶ n.5, 127; Section IV. Moreover, courts considering the same issue in similar antitrust cases have concluded that regression models like Dr. Mangum's can reliably demonstrate antitrust impact on a classwide basis. This case is similar to "the litany of antitrust price-fixing cases which have rejected claims that product and market diversity prevented a showing of common impact." *Potash*, 159 F.R.D. at 697.¹⁴ In *Olean Wholesale*, the Ninth

¹⁴ Defendants' citations are not on point. In *In re Pharmacy Benefits Managers Antitrust Litig.*, the court held that plaintiff's expert did not control for "legal behavior that could result in different reimbursement rates, such as local market concentration, size efficiencies, and differences in bargaining power." Civil Action No. 06-1782, 2017 WL 275398, at *18 (E.D. Pa. Jan. 18, 2017). Here, Dr. Mangum's model takes into account the non-conspiratorial factors that could affect pork prices. In *In re Lamictal Direct Purchaser Antitrust Litig.*, the defendants' expert created an affirmative model which showed that prices were actually lower for up to one third of the class. 957 F.3d 184, 192-94 (3d Cir. 2020). Here, Dr. Haider admitted that she did not prepare an affirmative econometric model to establish or estimate any pricing effects from the alleged conspiracy. "I'm not putting forward an affirmative model. That was not my role here." Haider Tr., at. 142:11-18. In *In re Pre-Filled Propane Tank Antitrust Litig.*, the court did not exclude the expert's opinion; rather it considered them in ruling on class certification and concluded that his overcharge model failed to account for the "undisputed and highly individualized issues with respect to retailer pricing." No. 14-02567-MD-W-GAF, 2021 WL 5632089, at *9-10 (W.D. Mo. Nov. 9, 2021). No such "undisputed and highly individualized" issues are present here where, as Dr. Mangum has opined, the prices for commodity pork products are highly correlated across geographies, customers, and product types. In *In re Optical Disk Drive*

Circuit considered the same argument levied against Dr. Mangum's similar analyses in support of class certification: "the district court considered Dr. Johnson's argument that Dr. Mangum's pooled regression model masked differences between purchasers." 31 F.4th at 675. The Ninth Circuit held that the district court correctly rejected the defendants' criticisms and properly recognized that "its task was to determine whether Dr. Mangum's evidence was capable of showing class-wide impact, not to reach a conclusion on the merits of the DPPs' claims." *Id.* at 676. The Ninth Circuit affirmed the district court's ruling that Dr. Mangum's overcharge model was capable of showing antitrust impact and that DPPs could rely on it "as evidence of the conspiracy's impact on similarly situated class members." *Id.* at 675; *see also Broiler Chicken*, 2022 WL 1720468, at *12 (citing cases holding that regression analysis can be used to demonstrate class-wide impact).

In *In re Lidoderm Antitrust Litigation*, the experts dueled over the number of uninjured class members: defendants' expert said it was approximately 24% and plaintiffs' expert opined that it was approximately 6.1%. Case No. 14-md-02521-WHO, 2017 WL 679367, at *19 (N.D. Cal. Feb. 21, 2017). The court found that this dispute among the

Antitrust Litig., the court denied the defendants' motion to strike the plaintiffs' expert opinions and considered them in ruling on class certification. 303 F.R.D 311, 321 (2014). The court initially concluded that the DPP's expert's regression model was incapable of demonstrating classwide antitrust impact because it estimated the same overcharge for all purchasers and all models of ODDs. *Id.* The DPP case settled. When IPPs presented a revised expert report in support of their renewed motion for class certification which included a price correlation analysis and an overcharge regression model for each product in the class, the court found the methodologies capable of proving classwide impact and certified the class. No. 3:10-md-2143 RS, 2016 WL 467444, at *5-6 (N.D. Cal. Feb. 8, 2016). Dr. Mangum's overcharge model estimates separate overcharges for each of the six pork products and includes a price correlation analysis.

experts did “not undermine the fact that both experts rely on common proof” to identify the uninjured and that the issue could be dealt with at the claims administration phase of the case. *Id.* The same is true here. Moreover, “[p]roponents of expert testimony need not demonstrate that the assessments of their experts are correct, and trial courts are not empowered ‘to determine which of several competing scientific theories has the best provenance.’” *Kuhn v. Wyeth, Inc.*, 686 F.3d 618, 625 (8th Cir. 2012) (reversing district court order excluding expert opinion).

Third, Defendants’ argument that a large percentage of DPPs were not individually impacted by the alleged conspiracy is based on Dr. Haider’s faulty analysis. Dr. Haider purports to test Dr. Mangum’s regression model by “interact[ing] the post-period dummy variable with each individual customer.” Mangum Reply Report, ¶ 124. In doing so, she calculates a single overcharge for most customers, but then also estimates sub-regressions for any customers that meet her definition of “top direct purchaser.” Mangum Reply Report, ¶ 120. Dr. Haider’s approach yields positive, statistically significant overcharges for 74% of the “top direct purchasers” she identified, while over 90% show a positive overcharge. Haider Report, ¶ 136, Ex. 31. Only 13 “top direct purchasers” (less than 2%) show a negative and statistically significant overcharge. *Id.* Although noting that Dr. Haider’s own analysis supports his conclusions, Dr. Mangum nonetheless explains that Dr. Haider has not, in fact, demonstrated that 26% of customers were not overcharged; “she has merely demonstrated that 26% of her selected “top customers” have insufficient samples in her model from which to draw firm conclusions.” Mangum Reply Report, ¶ 121. Moreover, Dr. Mangum points out that despite “[t]he fundamental failings of her

approach aside, the vast majority of customers without positive and statistically significant overcharges still had positive overcharge estimates.” *Id.*, ¶¶ 125-126. Indeed, Dr. Haider’s results reveal that her model estimates positive overcharges for 92% (508 positive and significant plus 119 positive and insignificant) of the 682 individual customers in her model” which supports a finding of common impact. *Id.*, ¶ 126 and Fig. 17.

4. Price Correlation is An Appropriate Tool to Assess Antitrust Impact and Dr. Mangum Applied it Correctly.

Finally, Defendants argue that Dr. Mangum’s price correlation analysis “by itself” is not evidence of antitrust impact. Mot. at 34-37. Defendants’ argument is easily resolved because Dr. Mangum does not claim otherwise. Dr. Mangum uses a price correlation analysis as *one tool* to analyze whether Defendants’ alleged conspiracy caused class-wide impact. His analyses are based on sufficient facts and data and are informative of whether there is a high correlation of prices across Defendants and geographic locations.

Dr. Mangum used Defendants’ transactional data to perform a pricing correlation test (Mangum Report, Section IV.D), “to investigate how the prices paid by customers vary across certain economic dimensions or characteristics. Such an analysis can be helpful in shedding light on the question of whether all or virtually all customers would likely be affected by the alleged conspiracy.” Mangum Report, ¶ 200. Dr. Mangum’s pricing correlation analyses demonstrated that “Defendants’ prices largely track one another, suggesting a reasonably high degree of price correlation across Defendants” (*Id.*, ¶ 204, Figs. 28-39), and thus support his opinions that the “alleged conspiracy would have affected all or virtually all DPPs, because DPPs would not have been able to avoid the

impact of the alleged conspiracy by switching from one Defendant to another.” *Id.* at 205; Mangum Reply Report, Section III.A. In addition, Dr. Mangum’s analysis shows a high degree of correlation across geographic locations, indicating that the effect of the alleged conspiracy would be nationwide rather than limited to any particular geography, and a high correlation across individual customers, indicating that there is a structure to prices. *Id.*, ¶¶ 99-101. Defendants do not argue that Dr. Mangum’s correlation analysis was not performed correctly.

Dr. Mangum explains that “the high correlation of prices across Defendants indicates that individual customers would be unable to avoid impact from the alleged conspiracy by switching to other Defendants.” *Id.*, ¶ 101. This empirical analysis is *one* component of the economic evidence Dr. Mangum relied on in forming his opinion of common impact and “it does not (and does not need to) serve as standalone proof.” *Id.*, ¶ 102. Courts have held that price correlation analysis is admissible as confirmatory evidence of common antitrust impact:

Dr. Mangum first performed a pricing correlation test, which demonstrated that the prices of the Tuna Suppliers’ products moved up or down together regardless of product or customer type, and thus supported the proposition that the Tuna Suppliers’ collusion had a common, supra-competitive impact on their prices. Based on this evidence, Dr. Mangum concluded that the Tuna Suppliers’ collusion would result in higher prices that would affect direct purchasers on a class-wide basis, which was consistent with his original theory. This finding is also consistent with “the prevailing [economic] view [that] price-fixing affects all market participants, creating an inference of class-wide impact even when prices are individually negotiated.

Olean Wholesale, 31 F.4th at 671 (citation omitted); *see also Korean Ramen*, 2017 WL 235052, *14-15 (denying motion to exclude Dr. Mangum’s price correlation analyses);

Mushroom, 2015 WL 5767415, at *19 (holding that critique of price correlation analysis “is a matter appropriate for cross examination rather than support for exclusion of [expert] testimony”). Accordingly, Dr. Mangum’s price correlation analysis is a reliable and accepted method to analyze antitrust impact and was correctly applied in this case.

IV. **CONCLUSION**

For the foregoing reasons, the Court should deny the Motion.

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